

# Year 7

# Subject: Design and Technology

Unit of work & brief outline of what will be covered.	Key Objectives – what will students learn	Assessment
<p><b>Communication in Design – Design Focus</b> Students will develop an understanding of a range of graphical communication techniques including isometric, orthographic and computer aided design.</p>	<ul style="list-style-type: none"> <li>Understand how to use 2D and 3D CAD packages to model and test ideas</li> <li>Recognise and understand how to use a range of graphic techniques to communicate design ideas.</li> </ul>	<p>Assessment is ongoing throughout the unit with a focus on two key assessment pieces; Crating 3D products – sketching in isometric and rendering and their TinkerCAD Avatar Design</p>
<p><b>Introduction to Timber – Making Focus</b> Students will understand how to safely work with a range of workshop tools and equipment, developing an understanding of how to plan and follow a making process.</p>	<ul style="list-style-type: none"> <li>Understand how to produce ordered sequences for manufacturing products using a range of techniques</li> <li>Know how to use specialist equipment to mark out, waste, join and finish materials</li> <li>Understand the procedures for safety and understand the process of risk assessment</li> <li>Know how to classify materials by structure (hardwoods and softwoods)</li> <li>Understand the physical properties of materials</li> </ul>	<p>Assessment is ongoing throughout the unit with a focus on two key assessment pieces; the students made outcome – quality of finish and their making plans including quality control.</p>
<p><b>Introduction to CAD/CAM – Design Focus</b> Students will develop an understanding of how to use 2D and 3D Computer Aided Design packages to develop ideas and the prototype them Computer Aided Manufacture.</p>	<ul style="list-style-type: none"> <li>Understand how to use 2D and 3D CAD packages to produce models and test ideas</li> <li>Recognise the benefits of using CAD CAM when developing design ideas</li> <li>Know and utilise a range of evaluation strategies to consider which ideas are most effective</li> </ul>	<p>Assessment is ongoing throughout the unit with a focus on two key assessment pieces; their development work and evaluation of this and an exam style question evaluating the use of 3D Modelling.</p>
<p><b>Introduction to textiles – Making Focus</b> Students will use a wide range of design strategies to come up with effective and interesting ideas before developing the understanding to safely prototype these using a range of equipment.</p>	<ul style="list-style-type: none"> <li>Understand how to apply a variety of approaches when designing to generate creative ideas</li> <li>Develop an understanding of a broad range of decorative and manufacturing techniques in textiles using specialist equipment</li> <li>Know how to select and modify patterns using these to construct products.</li> </ul>	<p>Assessment is ongoing throughout the unit with a focus on two key assessment pieces; students' final idea and made outcome.</p>
<p><b>What is a system? – Technical Knowledge Focus</b> Students will develop an understanding of input and output components in electronic circuits, before using these to produce and troubleshoot a range of circuits. They will then apply their knowledge of inputs and outputs to mechanical devices.</p>	<ul style="list-style-type: none"> <li>Understand how helps us determine how products are constructed and function</li> <li>Understand how more electrical systems can be powered and used in their products, producing circuits incorporating inputs and outputs</li> </ul>	<p>Assessment is ongoing throughout the unit with knowledge of input and output devices and their use in a circuit tested through an end of unit test.</p>
<p><b>Introduction to Food Preparation and Nutrition – Technical Knowledge Focus</b> Students will develop an understanding a healthy diet as depicted in The Eatwell Guide, considering the function of foods in the body. Students will develop an awareness of how to store, prepare and cook food safely and hygienically preparing a range of sweet and savoury dishes.</p>	<ul style="list-style-type: none"> <li>Understand the importance of a healthy and varied diet as depicted in The Eatwell Guide.</li> <li>Know how to store, prepare and cook food safely and hygienically, including an understanding of date marks and storage instructions</li> <li>Understand how to taste and cook a broad range of ingredients and healthy recipes, accounting for a range of needs, wants and values</li> </ul>	<p>Assessment is ongoing throughout the unit with a focus on Food Hygiene, sensory testing and practical skills.</p>